Specialist High Skills Major

Sector-Specific Guide

Manufacturing

DRAFT 2007–2008

reach every student

Ontario

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A. Overview

The Specialist High Skills Majors (SHSM), launched in September 2006, are part of the Student Success Strategy initiative, which focuses on expanding quality learning opportunities and supporting success for all students. The SHSM is a ministry-approved specialized program that allows students to focus their learning on a specific economic sector while meeting the requirements for the Ontario Secondary School Diploma (OSSD). This career-focused program is also designed to help prepare students to make the transition from secondary school to apprenticeship training, college, university, or the workplace. An SHSM enables students to gain sector-specific skills and knowledge in the context of engaging, career-related learning environments and helps them focus on graduation and on pursuing their postsecondary goals.

The ministry has published the *Specialist High Skills Major Implementation Guide*, as well as sector-specific guides, like this one, for each of the SHSM economic sectors. Boards and schools are strongly encouraged to refer to the *SHSM Implementation Guide* along with the SHSM sector-specific guides when planning and implementing an SHSM.

This guide provides information about the five required components of the SHSM–Manufacturing, sample pathways for the SHSM, examples of postsecondary programs in the sector, a list of resources, and profiles of the programs that were being offered in Ontario schools in 2007–08.

B. Advantages of Earning a Specialist High Skills Major (SHSM) in Manufacturing

Manufacturing industries have the largest share of employment in the goods-producing sector in Ontario, producing a variety of consumer and industrial products that are key to Ontario's wealth. The manufacturing sector accounts for one fifth of all economic activity in the province, and about 70 per cent of the sector's products are exported to other provinces and countries. In 2004, manufacturing employed over one million people in the province. Projections to 2009 indicate that manufacturing will account for 19 per cent of new job creation in Ontario.*

The SHSM–Manufacturing provides students with a strong foundation for a wide variety of careers in the manufacturing sector, from those focusing on the service, repair, and modification of vehicles and vehicle systems to those related to the organization and management of manufacturing services and mass-transit systems.

Pursuing the Specialist High Skills Major–Manufacturing enables students to:

- customize their secondary school education to suit their interests and talents while meeting the requirements for the OSSD;
- select a bundle of 9 required credits focused on sector-specific knowledge and skills that are:
  - valued by the manufacturing sector and postsecondary educational institutions;
  - designed to help prepare students for a postsecondary destination of their choice in this economic sector;
  - designed with the flexibility to allow students to shift between pathways (e.g., switch from a pathway leading to college to an apprenticeship pathway) or to discontinue the SHSM program should their career plans change in Grade 11 or 12;
- provide evidence of achievement of the required components of the SHSM (e.g., sector-recognized certifications) for prospective employers and postsecondary educational institutions;
- explore, identify, and refine career goals and make informed decisions about their postsecondary options;
- take part in "reach ahead" experiences that will help them gain confidence in their ability to be successful, refine skills and work habits, and make an informed choice about future careers and next steps;

* Automotive Parts Manufacturing Association (APMA)

- develop Essential Skills and work habits that are required in the sector, and have their performance of those skills and work habits assessed and documented, using tools connected with the Ontario Skills Passport;
- access resources, equipment, and expertise that may not be available in their secondary school.

C. Required Components for the SHSM–Manufacturing

Required Components for the SHSM–Manufacturing

1. a bundle of 9 Grade 11 and Grade 12 credits that includes:
   - i) 4 manufacturing major credits that provide sector-specific knowledge and skills;
   - ii) 3 other required credits from the Ontario curriculum, in English, mathematics, and science, in which some expectations are met through learning activities contextualized to the manufacturing sector;
   - iii) 2 cooperative education credits that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills
2. 6 sector-recognized certifications and/or training courses/programs (3 compulsory and a choice of 3 from a list of additional certifications and training courses/programs)
3. experiential learning activities within the sector
4. "reach ahead" experiences connected with the student's postsecondary pathway
5. development of Essential Skills and work habits required in the sector, and use of the Ontario Skills Passport (OSP) for purposes of documentation

Students earning an SHSM receive an OSSD with the red SHSM seal as well as an SHSM Record that documents the student's achievement of the required components.

The five required components for an SHSM diploma designation are designed to give students a rich and varied range of curriculum-based and experiential learning experiences, as a foundation for making a successful transition to their chosen postsecondary education or training program or occupation.

Local circumstances, such as facilities and equipment, staff qualifications, partnerships, and agreements, determine how the SHSM's required components can be offered to students. Depending on these circumstances, the components may be delivered in a secondary school, college, training centre, other approved site, or a combination of these delivery settings. See the *SHSM Implementation Guide* for more information on delivery models.

No substitutions for any of the five required components of an SHSM are permitted.

1. Bundled Credits

Each SHSM has a bundle of credits that consists of major credits, other required credits, and cooperative education credits. The bundle for the SHSM–Manufacturing consists of:

i) 4 major credits;

ii) 3 other required credits;*

iii) 2 cooperative education credits.

The credits in the bundle prepare students for one of four postsecondary options – apprenticeship training, college, university, or the workplace.

i) Major credits

Each SHSM has four major credits that enable students to build a foundation of sector-focused knowledge and skills. The major credits may be:

- credits for Ontario curriculum courses;
- credits for ministry-approved locally developed courses (LDCs); or
- dual credits, which are subject to their own approval polices and procedures.

ii) Other required credits

In addition to the major credits, each SHSM includes *other required credits* from the Ontario curriculum. (In the SHSM–Manufacturing, the other required credits are in English, mathematics, and science.) These courses are delivered by the teachers of the required subjects, and involve the use of contextualized learning activities (CLAs), which enable students to connect their learning in these courses to their SHSM sector. CLAs are based on curriculum expectations from the required course. One or more CLAs, totalling a minimum of six hours in length, must be incorporated into each required course. (A CLA template is provided in Appendix A.)

iii) Cooperative education credits

Cooperative education provides authentic learning experiences in a workplace setting that enable students to refine, extend, apply, and practise the sector-specific knowledge and skills acquired in the bundle of credits. Each SHSM requires that students complete a minimum of two credits in cooperative education linked to the major credits. (More than two credits are recommended, if the student's timetable permits.)

Students may earn their minimum of two cooperative education credits in Grade 11 and/or Grade 12, as a single credit in each grade or a double credit in one grade. (Students in the university pathway, however, are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.) Depending on local circumstances, students may have to complete their cooperative education credits through continuing education, in the summer, or through virtual cooperative education. See *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*.

* SHSMs in other sectors may require 2 or 4 "other" credits. For details, see the other sector-specific guides.

Summary of the Required Credits in the Bundle for the SHSM–Manufacturing

The 9 required credits in the bundle for the SHSM–Manufacturing are identified in the table below. No substitutions for the credits in the bundle are allowed, and the credits must be at the specified grade level. School boards are required to submit for ministry approval their proposed pathway chart for each SHSM offered by their schools, indicating the credits in each bundle by pathway. Once a credit bundle is approved, the board may not change any of the credits in the bundle for that school year.

Required Credits in the Bundle for the SHSM–Manufacturing

Credits	Apprenticeship Training		College		University		Workplace	
	Gr. 11	Gr. 12	Gr. 11	Gr. 12	Gr. 11	Gr. 12	Gr. 11	Gr. 12
Manufacturing Major*	2	2	2	2	2	2	2	2
English	1		1		1		1	1
Mathematics		1		1		1	1	
Science	1		1		1			
Cooperative Education	2		2		2		2	
Total number of credits	9		9		9		9	

* Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2000*, page 6).

A pathways chart is given on page 14, showing subjects and courses that students could take to explore the SHSM–Manufacturing in Grades 9 and 10, and courses they would have to take in Grades 11 and 12 to complete this specialized program. Sample bundles of credits that would meet the requirements for the SHSM–Manufacturing are provided in the chart on page 15.

2. Sector-Recognized Certification and Training

Sector-recognized certifications and training courses/programs, including those addressing safety, are important for students who are working towards the SHSM and provide them with an advantage when they are entering the workforce, whatever their chosen career goal may be.

Certification and training courses/programs must:

- be delivered by a certified trainer – a person recognized by the certification provider or by the sector as an authority. (This requirement does not apply to WHMIS.);
- include an assessment and evaluation component;
- include, wherever possible, documentation such as a certificate or other proof of completion for the student's portfolio and the student's SHSM Record. The SHSM Record will indicate the title of each certification earned or training course/program completed, the number of hours involved, and the date the certification/training was completed.

The SHSM in manufacturing requires students to complete six (6) sector-recognized certifications and/or training courses/programs. Of these, three (3) are compulsory and the remaining three (3) are to be chosen from the list in the following chart. These requirements are summarized below.

SHSM–Manufacturing: Sector-Recognized Certification and Training

Three (3) compulsory			
Standard First Aid	Cardio-Pulmonary Resuscitation (CPR)	generic (i.e., not site-specific) instruction about the Workplace Hazardous Materials Information System (WHMIS)	
Three (3) from the list below			
CAD/CAM (computer-aided design and computer-aided manufacturing)	Canadian Welding Bureau (CWB) – flat	confined space entry	elevated work platforms
fall protection	hoisting and rigging	lift truck safety	lockout/tag safety
personal safety equipment – manufacturing	propane safety	transportation of dangerous goods	

Note: Items that are capitalized are the *proper names* of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certification or training courses/programs should be selected by the school or board.

Boards and schools may provide opportunities for students to complete additional training.

No substitutions for items in the above lists or changes in the *number* of required certifications and training courses/programs are permitted.

3. Experiential Learning Activities

The SHSM experiential learning requirement consists of planned learning activities that take place outside the traditional classroom setting. Experiential learning, which can include job shadowing, job twinning, work experience, virtual work experience, and cooperative education (see Appendix B), enables students enrolled in the SHSM to find out about opportunities available to them in connection with the careers that interest them.

Experiential learning activities give students opportunities to explore, observe, participate in, and reflect on a variety of sector-specific experiences and careers. They also enable students to increase their awareness of, and develop, the Essential Skills and work habits required in the sector, and to have their performance of those skills and habits assessed and documented, using tools connected with their Ontario Skills Passport. An experiential assignment or task could require students to identify examples of how the Essential Skills are applied in specific trades and administrative and management occupations (e.g., millwright, safety officer) in a manufacturing business.

Experiential learning opportunities could include:

- one-on-one observation of a cooperative education student at a placement in the manufacturing sector (example of job twinning);
- a day-long observation of a skilled tradesperson in the manufacturing sector (example of job shadowing);
- a one- or two-week work experience with a member of an industry association or a professional in the sector (example of work experience);
- participation in a local, provincial, or national Skills Canada competition;
- a tour of a range of manufacturing enterprises;
- attendance at a manufacturing trade show, conference, or job fair;
- attendance at demonstrations and hands-on activities presented by equipment vendors.

An experiential learning activity connected with the student's postsecondary pathway can be considered a "reach ahead" experience (see section 4, below). For example, job shadowing a skilled tradesperson in a local manufacturing business would be an experiential learning activity for all students in a Manufacturing SHSM, but it could also be a "reach ahead" experience for a student considering a career as such a tradesperson. Note, however, that the activity can be recorded *only once* on the student's SHSM Record – as either an experiential learning activity or a "reach ahead" experience. This restriction reflects the expectation, described earlier, that the student's SHSM program will offer a rich and varied range of experiential learning opportunities.

Cooperative education is also a form of experiential learning. However, for the purposes of the SHSM program requirements and the student's SHSM Record, the two cooperative education credits must be counted as part of the SHSM bundled credit requirement.

Experiential learning placements for students must be arranged by the school and must meet the following requirements:

- A placement must be assessed by a teacher before the student is assigned to it to ensure that the placement offers a positive learning environment and a safe workplace. (*See Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools*, 2000. Available online at www.edu.gov.on.ca/eng/document/curricul/secondary/coop/cooped.pdf.)
- A placement must have Workplace Safety and Insurance Board coverage through the ministry or the workplace.(See Policy/Program Memorandum No. 76A, September 27, 2000; excerpted in Appendix B of the *SHSM Implementation Guide*.)

For more information consult *Live Safe! Work Smart! Appendix for Cooperative Education and Other Forms of Experiential Learning*, at www.livesafeworksmart.net/english/coop/coop_appdx.htm.

For a summary of the regulations governing age requirements for working in and/or visiting workplaces in Ontario, see Appendix C.

4. "Reach Ahead" Experiences

Students in the SHSM in manufacturing must have learning experiences connected with their postsecondary pathway. "Reach ahead" experiences can range from visiting a college to investigate the program a student is considering, to sitting in on university classes in a student's field of interest, to discussing the postsecondary education, training, and experiences of someone in the occupation a student is interested in. These experiences can vary in length – from a few hours to the time necessary for a full course. Examples include:

- *Workplace:* observing the production lines in a manufacturing company
- *Apprenticeship training:* teaming up with an apprentice in an in-school lab setting at a college
- *College:* monitoring classes in industrial or automotive engineering at a college
- *University:* spending a day with a design engineer in a vehicle manufacturing facility
- *All pathways:* touring a manufacturing company or a business that recovers and recycles industrial components

Every "reach ahead" experience should have an assignment or task associated with it. For example, the assignment for a student considering an apprenticeship pathway could be to interview a tradesperson to discover details about his or her training, and to write a report summarizing the tradesperson's answers.

5. Development of Essential Skills and Work Habits, and Use of the Ontario Skills Passport (OSP) for Purposes of Documentation

Human Resources and Social Development Canada (HRSDC) has identified and validated the Essential Skills that people need for life, learning, and work. Essential Skills are foundational skills that make it possible to learn technical skills and other job- or workplace-specific skills. They are skills that enable people to perform tasks required in their jobs and to participate fully in the workplace and in the community. These Essential Skills are transferable from school to work, job to job, and sector to sector. The Ministry of Education and the Ministry of Training, Colleges and Universities have developed the Ontario Skills Passport (OSP) on the basis of the HRSDC's Essential Skills. The OSP also incorporates work habits that are

beneficial not only for work but also for life and learning. The skills and work habits included in the OSP are as follows:

Essential Skills	Work Habits
• Reading Text • Writing • Document Use • Computer Use • Oral Communication *Numeracy* • Money Math • Scheduling or Budgeting and Accounting • Measurement and Calculation • Data Analysis • Numerical Estimation *Thinking Skills* • Job Task Planning and Organizing • Decision Making • Problem Solving • Finding Information	• Working Safely • Teamwork • Reliability • Organization • Working Independently • Initiative • Self-Advocacy • Customer Service • Entrepreneurship

The Ontario Skills Passport provides clear descriptions of Essential Skills that are used in nearly all occupations and of work habits that are important for success in the workplace. The OSP provides a common language that helps students build competence and confidence and make connections between school and their prospective careers. The OSP also provides employers with a consistent method of assessing the student's demonstration of these skills and work habits in the workplace.

Sector representatives consulted on the development of the SHSMs emphasized the importance of the Essential Skills and work habits included in the OSP. Students pursuing an SHSM–Manufacturing track their development of Essential Skills and work habits in their OSP Work Plan throughout their experiential learning activities (including cooperative education placements and "reach ahead" experiences). In consultation with the teacher, employers assess each student's demonstration of Essential Skills and work habits identified in the OSP and record their assessments in the student's OSP Work Plan.

See the *SHSM Implementation Guide* for more information about the OSP and how it can be used in connection with an SHSM program. The OSP website (http://skills.edu.gov.on.ca) also offers resources for the use of the OSP in SHSM programs.

D. Pathways for the SHSM–Manufacturing

This section contains the following:

- ideas that schools and boards can use to promote awareness and exploration of the SHSM–Manufacturing among students and to help students as they make the decision to specialize in this program
- a chart showing a pathways template for completing the SHSM–Manufacturing
- a chart that contains sample bundles of credits for the SHSM–Manufacturing

Strategies for Promoting and Suggestions for Planning the SHSM–Manufacturing

Grades 7 and 8: Awareness

The following are examples of strategies that boards and schools can use to build Grade 7 and 8 students' awareness of the SHSM program:

- organize field trips, competitions, and activities in the community that are specific to the SHSM
- host presentations or talks on careers with guest speakers and mentors from the sector
- hold a summer program sponsored by the sector before students enter secondary school
- organize experiences at a secondary school in the program related to this sector
- invite current SHSM–Manufacturing students to share their experiences

Grades 9 and 10: Exploration

Students who are considering pursuing the SHSM–Manufacturing can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options related to the manufacturing sector:

- Integrated Technologies: A Grade 9 course recommended for all SHSM pathways that have a technological education focus. It provides students with opportunities to explore a variety of technologies, including manufacturing technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

- Manufacturing Technology (TMJ2O): Recommended for any Grade 10 student who is considering entering an SHSM–Manufacturing. It provides students with opportunities to explore manufacturing technology, identify personal interests and aptitudes, and investigate the SHSM–Manufacturing.

Grades 11 and 12: Specialization

Students acquire the sector-specific knowledge and skills required to earn their OSSD with an SHSM–Manufacturing by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable them to pursue their goals.

Manufacturing sector contacts have identified knowledge of entrepreneurship and basic business practices as important for students as they prepare for careers in this sector. It is, therefore, recommended that in Grade 11 or 12 students do one of the following:

- complete an entrepreneurship course offered in the Ontario business studies curriculum
- pursue an extracurricular activity focused on entrepreneurship (e.g., participation in Junior Achievement's Company Program)

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Pathways Template for the SHSM–Manufacturing

- Shaded boxes – required credits in the bundle for the SHSM–Manufacturing
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests

Grade 9 *Exploration*	**Grade 10** *Exploration*	**Apprenticeship Training Pathway** *Specialization*		**College Pathway** *Specialization*		**University Pathway** *Specialization*		**Workplace Pathway** *Specialization*	
		Grade 11	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**
An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit
(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English
(C) Mathematics	(C) Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	(R) Mathematics
(C) Science	(C) Science	Science *in either Gr. 11 or Gr. 12*	An optional or a compulsory credit *in either Gr. 11 or Gr. 12*	Science *in either Gr. 11 or Gr. 12*	An optional or a compulsory credit *in either Gr. 11 or Gr. 12*	Science	(R) Science	Science	Science
(C) Geography of Canada	(C) Canadian History	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**
(C) Core French	(C) Career Studies/ Civics	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**	**Manufacturing Major**
(C) Healthy Active Living Education	(C) The Arts	May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *recommended in Gr. 11**		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*	
(R) Integrated Technologies	(R) Manufacturing Technology	(R) Business Studies or an optional or a compulsory credit	(R) Cooperative Education or an optional or a compulsory credit	Business Studies or an optional or a compulsory credit	Cooperative Education or an optional or a compulsory credit	(R) Science	(R) Mathematics	(R) Business Studies or an optional or a compulsory credit	Cooperative Education or an optional or a compulsory credit

* Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Sample Bundles of Credits for the SHSM–Manufacturing

- Shaded boxes – required credits in the bundle for the SHSM–Manufacturing
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests
- The letters C, E, M, O, and U at the end of course codes indicate the following types of courses: C – college preparation; E – workplace preparation; M – university/college preparation; O – open; U – university preparation
- A list of **all** courses that are approved for inclusion in the bundle of credits for an SHSM–Manufacturing is available on the Ministry of Education website, at www.edu.gov.on.ca.

Apprenticeship Training Pathway		**College Pathway**		**University Pathway**		**Workplace Pathway**	
Grade 11	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**
An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit
(C) ENG3C English	(C) ENG4C English	(C) ENG3C English	(C) ENG4C English	(C) ENG3U English	(C) ENG4U English	(C) ENG3E English	(C) ENG4E English
(C) MCF3M Functions and Applications	MCT4C Mathematics for College Technology	(C) MCF3M Functions and Applications	MCT4C Mathematics for College Technology	(C) MCR3U Functions	MHF4U Advanced Functions	(C) MEL3E Mathematics for Work and Everyday Life	(R) MEL4E Mathematics for Work and Everyday Life
SNC3E Science	SPH4C Physics	SNC3M Science	SPH4C Physics	SPH3U Physics	(R) SCH4U Chemistry	SNC3E Science	SNC4E Science
Manufacturing Major TMJ3C Manufacturing Engineering Technology	**Manufacturing Major** TMJ4C Manufacturing Engineering Technology	**Manufacturing Major** TMJ3C Manufacturing Engineering Technology	**Manufacturing Major** TMJ4C Manufacturing Engineering Technology	**Manufacturing Major** TMJ3C Manufacturing Engineering Technology	**Manufacturing Major** SPH4U Physics	**Manufacturing Major** TMJ3E Manufacturing Technology	**Manufacturing Major** TMJ4E Manufacturing Technology
Manufacturing Major TMJ3C Manufacturing Engineering Technology	**Manufacturing Major** TMJ4C Manufacturing Engineering Technology	**Manufacturing Major** TDJ3M Technological Design *or* TMJ3C Manufacturing Engineering Technology	**Manufacturing Major** TDJ4M Technological Design *or* TMJ4C Manufacturing Engineering Technology	**Manufacturing Major** TDJ3M Technological Design	**Manufacturing Major** TDJ4M Technological Design	**Manufacturing Major** TDJ3E Technological Design *or* TMJ3E Manufacturing Technology	**Manufacturing Major** TDJ4E Technological Design *or* TMJ4E Manufacturing Technology
May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *recommended in Gr. 11**		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*	
(R) BDI3C Entrepreneurship: The Venture	Cooperative Education	(R) BDI3C Entrepreneurship: The Venture	Cooperative Education	(R) SCH3U Chemistry	(R) MCV4U Calculus and Vectors	(R) BMX3E Marketing: Retail and Services	GLN4O Navigating the Workplace

* Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

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E. Occupations in the Manufacturing Sector

The National Occupational Classification (NOC) is a system that describes and classifies all occupations in Canada using four-digit codes called National Occupation Codes (NOCs). This system and the codes are the authoritative source for occupational information in Canada. Entering one of these four-digit codes in the "Quick Search" box on the NOC website (http://www23.hrdc-drhc.gc.ca/2001/e/generic/welcome.shtml) provides occupational information related to that career.

For more information on occupations, go to the Ontario Skills Passport website (http://skills.edu.gov.on.ca), click on "Occupations and Tasks" in the navigation bar, select "Sorted by NOC", and click on the "Sample Workplace Tasks" checkmark for one of the occupations to view a description of the occupation, an overview of the Essential Skills required in the occupation, a list of sample tasks for the occupation, and assessment tools and other career and employment information related to the occupation.

The following are examples of occupations in the manufacturing sector, with corresponding NOC codes, sorted according to the type of postsecondary education or training the occupations would normally require.

Note: Some of the names of occupations given below may differ slightly from the names in the NOC. The names listed here reflect common usage by institutions and organizations in this sector in Ontario.

Apprenticeship Training

- Die Designer 2232
- Electrician 7212
- Electrician, Plant Maintenance 7242
- Industrial Instrument Mechanic 2243
- Millwright – Industrial 7311
- Mould Maker 7231
- Precision Machinist 7231
- Precision Metal Fabricator 7263
- Roll Grinder/Turner 9511
- Tool and Cutter Grinder 9511
- Tool and Die Maker 7232
- Welder 7265
- Welder Fitter 7265

College

- Buyer 1225
- Chemical Production Engineering Technologist 2211
- Design and Drafting Technologist 2253
- Electronics Engineering Technologist and Technician 2241
- Industrial Engineering Technologist and Technician 2233
- Instrumentation and Control Technologist and Technician 2243
- Inventory Analyst 1215
- Manufacturing Technician/Technologist 2233
- Materials Supervisor/Material Control Manager 0114
- Mechanical Engineering Technologist 2232
- Photonics Technologist and Technician 2241
- Production and Quality Control Technologist 2233
- Stationary Engineer 7351
- Technical Sales Specialist 6221

University

- Chemical Engineer 2134
- Electrical Engineer 2133
- Engineer, Computer Integrated Manufacturing 2141
- Industrial and Manufacturing Engineer 2141
- Mechanical Engineer 2132
- Metallurgical Engineer 2142
- Process Engineer 2141

Workplace

- Foundry Worker 9412
- Inventory Clerk 1474
- Labourer, Material Handling 7452
- Machine Operator, Metal Machining 9511
- Motor Vehicle Assembler 9482
- Solderer 7265

F. Postsecondary Programs and Training Related to Careers in the Manufacturing Sector

The following are examples of programs and training related to careers in the manufacturing sector and the accreditations or types of accreditation each results in:

Apprenticeship Training

Construction Boilermaker	Certificate of Apprenticeship/ Certificate of Qualification
General Machinist	Certificate of Apprenticeship/ Certificate of Qualification
Industrial Maintenance Mechanic	Certificate of Apprenticeship/ Certificate of Qualification
Machine Tool Builder and Integrator	Certificate of Apprenticeship/ Certificate of Qualification
Machinist	Certificate of Apprenticeship/ Certificate of Qualification
Mechanical Millwright	Certificate of Apprenticeship/ Certificate of Qualification
Millwright	Certificate of Apprenticeship/ Certificate of Qualification
Mould Maker	Certificate of Apprenticeship/ Certificate of Qualification
Precision Metal Fabricator	Certificate of Apprenticeship/ Certificate of Qualification
Sheet Metal Worker	Certificate of Apprenticeship/ Certificate of Qualification
Steamfitter Apprenticeship	Certificate of Apprenticeship/ Certificate of Qualification
Welder Apprenticeship	Certificate of Apprenticeship/ Certificate of Qualification

College

Bachelor of Applied Technology – Process Automation	Bachelor's degree
Industrial Engineering Technology – Management	Diploma
Industrial Management	Diploma
Integrated Manufacturing Systems	Diploma
Manufacturing Engineering Technology	Diploma
Manufacturing Management	Diploma
Mechanical CAD/CAM Technician – Automated Machining	Diploma
Mechanical Engineering Technician	Diploma
Mechanical Engineering Technology	Diploma
Mechanical Technician – Tool Making	Diploma

University

Industrial Engineering	Bachelor's degree
Industrial Engineering with an Automotive Manufacturing Systems Engineering Option	Bachelor's degree
Manufacturing Engineering	Bachelor's degree
Manufacturing Engineering and Management	Bachelor's degree
Mechanical Engineering – Manufacturing, Controls, Automation, and Robotics	Bachelor's degree

Training for the Workplace

Flux Cored Arc Welding (Manufacturing)	Certificate
Gas Metal Arc Welding (Manufacturing)	Certificate
Good Manufacturing Processes (GMP)	Certificate
Manufacturing Techniques	Certificate
Manufacturing Techniques – Wood Products	Certificate
Mechanical Techniques – CNC/CAD/CAM Specialist	Certificate
Mechanical Techniques – Design	Certificate
Mechanical Techniques – Manufacturing	Certificate
Welder Operator Manufacturing	Certificate
Welding Techniques	Certificate

G. Resources

Associations and Other Professional Groups

Alliance of Sector Councils	www.councils.org
Automotive Parts Manufacturers' Association (APMA)	www.apma.ca
Canadian Association of Mold Makers	www.camm.ca/
Canadian Machine, Tool, Die, and Mould Federation	www.cmtdmfed.ca/
Canadian Plastics Industry Association	www.cpia.ca/
Canadian Tooling and Machining Association	www.ctma.com/
Conference Board of Canada	www.conferenceboard.ca
International Fluid Power Society	www.ifps.org
International Technology Education Association (ITEA)	www.iteaconnect.org
Ontario Cooperative Education Association	www.ocea.on.ca
Ontario Council for Technology Education (OCTE)	www.octe.on.ca
Ontario School Counsellors' Association	www.osca.ca
Skills Canada	www.skillscanada.com
Skills Canada–Ontario	www.skillsontario.com

Careers

Apprenticeship Search	www.apprenticesearch.com
Canada Job Futures	www.jobfutures.ca
Career Cruising	www.careercruising.com
CBC Learning	www.cbclearning.ca
Employment Ontario	www.edu.gov.on.ca/eng/tec/etlanding.html
Job Bank	www.jobbank.gc.ca

Labour Market Information	www.labourmarketinformation.ca/
Ontario Prospects	www.ontarioprospects.info
Ontario Skills Passport (OSP)	http://skills.edu.gov.on.ca
Ontario WorkInfoNet	www.onwin.ca/english
Statistics Canada	www.statcan.ca
Youth Opportunities Ontario	www.youthjobs.gov.on.ca

Education/Government

Applications of Working and Learning National Project	www.awal.ca/about.asp
Federal Resources for Educational Excellence	www.free.ed.gov
Independent Learning Centre	www.ilc.org
Industry Canada	www.ic.gc.ca/epic/site/ic1.nsf/men/home
Ministry of Education	www.edu.gov.on.ca
Ministry of Labour	www.labour.gov.on.ca
Ministry of Research and Innovation	www.mri.gov.on.ca
Ministry of Small Business and Entrepreneurship	www.sbe.gov.on.ca
Ministry of Training, Colleges and Universities	www.edu.gov.on.ca/eng/tcu
Ontario College Application Service	www.ontariocolleges.ca
Ontario Universities' Application Centre	www.ouac.on.ca
Passport to Prosperity	www.edu.gov.on.ca/passport
Towes: How Do Your Skills Measure Up? Skill Plan	http://measureup.towes.com

Safety, Training, and Certifications

Canada Safety Council (CSC)	www.safety-council.org/
Canadian Centre for Occupational Health and Safety (CCOHS)	www.ccohs.ca/
Canadian Red Cross Society	www.redcross.ca
Electrical Safety Authority	www.esasafe.com
Industrial Accident Prevention Association (IAPA)	www.iapa.ca/
Lifesaving Society	www.lifesaving.ca/
Live Safe! Work Smart!	www.livesafeworksmart.net/
Passport to Safety	www.passporttosafety.com/

Prevention Dynamics	www.preventiondynamics.com
St. John Ambulance	www.sja.ca
Virtual WHMIS	www.virtualwhmis.com
Workplace Safety and Insurance Board (WSIB)	www.wsib.on.ca

H. Appendices

Appendix A: Contextualized Learning Activities (CLAs) for the Specialist High Skills Majors

For the "other required credits" in the bundle of credits, students in a Specialist High Skills Major program must complete learning activities that are contextualized to the knowledge and skills relevant to the economic sector of the SHSM. Contextualized learning activities (CLAs) address curriculum expectations in these courses.

CLAs must take a minimum of 6 hours to complete. Boards may choose to develop one activity that takes 6 hours to complete or two or more activities that together take a minimum of 6 hours to complete.

This template must be used to describe the CLAs. The completed form must be submitted to the Ministry of Education for approval.

(continued)

Appendix A *(continued)*

Contextualized Learning Activity (CLA) Template

Submit all material in Microsoft Word.

Contact Information

Board: _____

Development date: _____

Contact person: _____

Position: _____

Phone: ( )_____-_____ Fax: ( )_____-_____ E-mail: _____

Specialist High Skills Major	
Course code and course title	
Name of contextualized learning activity/activities	

Brief description of contextualized learning activity/activities	
Duration	*(A minimum of 6 hours to complete the CLA(s) is required.)*
Overall expectations	*(Identify the overall expectation(s) to be assessed and/or evaluated through the CLA(s). Include strand title(s).)*
Specific expectations	*(Identify the specific expectations related to the above overall expectation(s) that are addressed in the instructional and assessment strategies of the CLA(s). Include strand title(s) and suborganizer(s).)*
Essential Skills and work habits from the OSP	*(List the Essential Skills and work habits from the OSP that are addressed in the CLA(s).)*
Catholic graduate expectations (if applicable)	

Instructional/Assessment Strategies

Teacher's Notes *(Provide suggestions that will assist the teacher in delivering the CLA(s). For example, remind teachers to make sure that handouts, such as authentic workplace materials/documents used by the sector, are available for the activity.)*

Context *(Describe the workplace context for the activity/activities.)*

Strategies *(In point form, describe the sequence of instructional and assessment strategies that will support the intended learning. Attach all student handouts and worksheets.)*

Assessment and Evaluation of Student Achievement – Summary

(List all assessment and evaluation strategies and tasks, based on the strategies identified in the preceding section. Attach checklists, rubrics, correction keys, etc.)

Strategies/Tasks *(add rows as required)*	**Purpose** Assessment *for* learning (diagnostic, formative) *OR* Assessment *of* learning (summative; for evaluation)
1.	
2.	
3.	
4.	
5.	
6.	

Additional Notes/Comments/Explanations

(Provide additional suggestions for teachers that will help them deliver the CLA(s).)

Resources

(List all the resources needed to support the implementation of the CLA(s).)

Authentic Workplace Materials *(e.g., blueprints, workplace manuals, specification sheets, spreadsheets)*

Human Resources

Print

Video/DVD

Software

Websites

Other

Accommodations

(List instructional, environmental, and assessment accommodations.)

List of Attachments

(Attach all related materials, e.g., student worksheets, tests, rubrics.)

Appendix B: Forms of Experiential Learning and Related Programs

Length	Credit Value	Description	Key Elements
Job shadowing			
1/2 to 1 day (in some cases, up to 3 days)	none	one-on-one observation of a worker at a place of employment	• involves the pairing of a student with a worker in a specific occupation • may be integrated with a credit course • may be part of a student's school–work transition program
Job twinning			
1/2 to 1 day	none	one-on-one observation of a cooperative education student at his or her placement	• involves the pairing of a student with a cooperative education student • may be integrated with a credit course • may be part of a student's school–work transition program
Work experience			
1–4 weeks	none	a planned learning opportunity, within any credit course, that provides students with relatively short-term work experiences, usually of one or two weeks' duration and not exceeding four weeks	• involves a short-term, subject-related work placement • forms an integral part of a specific credit course • requires pre-placement orientation • requires a personalized placement learning plan
Virtual work experience			
the equivalent of 1–4 weeks	none	a simulated work experience, within any credit course, that allows students, including students who receive a special education program or services and students in rural areas, to take advantage of a greater variety of experiences than those available in the local economy	• involves a short-term, subject-related virtual work placement facilitated through the use of computer software and the Internet • forms an integral part of a specific credit course • requires pre-placement orientation • requires a personalized placement learning plan
Cooperative education			
full term (year or semester)	1 credit per 110-hour cooperative education credit course successfully completed	a planned learning experience, for which credits are earned, that integrates classroom theory and learning experiences at a workplace to enable students to apply and refine the knowledge and skills acquired in a related curriculum course or a locally developed course	• requires a personalized placement learning plan • involves the earning of credits • requires 15 hours of pre-placement instruction • is monitored by the cooperative education teacher • has a classroom and a workplace component • involves reflective learning • requires 7 hours of integration per co-op credit

Length	Credit Value	Description	Key Elements
School–work transition programs			
varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12)	varies with type of planned workplace experience	a combination of school- and work-based education and training involving a variety of learning opportunities	• is oriented towards students who will be entering the workforce directly after high school • involves the development of partnerships with employers • involves the enhancement of curriculum with input from employers • involves the earning of cooperative education credits
Ontario Youth Apprenticeship Program (OYAP)			
varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12)	varies with opportunities	an opportunity for a student to meet diploma requirements while participating in an apprenticeship occupation	• is designed for students 16 years of age and older who have already earned 16 credits towards the OSSD • may involve the student's registration in an apprenticeship • requires documentation by the student and trainer regarding trade-specific competencies acquired • involves the earning of cooperative education credits

(From Ontario Ministry of Education, *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*, pp. 7–8)

Appendix C: Minimum Age to Work in and Visit Ontario Workplaces[1]

<table>
<tr><th>Specialist High Skills Major[2]</th><th>Type of Workplace</th><th>Minimum Age to Work</th><th>Minimum Age to Visit / Conditions for Visiting[3]</th></tr>
<tr><td>• Arts and Culture
• Business
• Health and Wellness
• Hospitality and Tourism</td><td>Industrial establishments,[4] such as offices, stores, arenas, restaurant serving areas</td><td>14</td><td rowspan="3">The regulation governing industrial establishments (Reg. 851, R.R.O. 1990) made under the OHSA sets out minimum age restrictions for workers, covering workplaces such as offices, stores, arenas, restaurants, and factories. However, the regulation states that people younger than the specified minimum age to work may visit (but not work in) these establishments if:
• they are accompanied by a person who has attained the age of majority (i.e., 18 years of age);
• they are being guided on a tour of the industrial establishment (e.g., office, store, arena, or factory);
• they are in an area of the industrial establishment used for sales purposes; or
• they are in an area of the establishment to which the public generally has access.</td></tr>
<tr><td>• Business
• Hospitality and Tourism
• Manufacturing
• Transportation</td><td>Most factories,[5] including restaurants and any commercial kitchens, automotive service garages, produce and meat preparation or shipping and receiving areas in grocery stores, laundries, and warehouses</td><td>15</td></tr>
<tr><td>• Forestry</td><td>Logging operations[6]</td><td>16</td></tr>
<tr><td>• Construction</td><td>Construction project[7]</td><td colspan="2">16
Under the regulation governing construction projects (O. Reg. 213/91) made under the OHSA, 16 is the minimum age to work on or to visit any construction project. A person under the age of 16 may visit a construction site only when work is not being performed there. (Note that the definitions of construction and construction project include a wide variety of types of work and workplaces. It is important to review the definitions carefully. See note 7, below.)</td></tr>
</table>

All notes appear on pages 33–35.

Specialist High Skills Major[2]	Type of Workplace	Minimum Age to Work	Minimum Age to Visit / Conditions for Visiting[3]
• Mining	Surface mines,[4] mining plants[5] Underground mine Working face of a surface mine	16 18 18	The regulation governing mines and mining plants (Reg. 854, R.R.O. 1990) made under the OHSA allows for tours or visits to mines and mining plants by persons who are younger than the specified minimum age to work if they are accompanied by and under the direction of a guide.
• Agriculture • Arts and Culture • Environment • Health and Wellness • Horticulture and Landscaping	Certain workplaces (or parts thereof) may be covered, with respect to age restrictions, by regulations governing other sectors. For example, see the industrial establishments regulation (Reg. 851, R.R.O. 1990).		
• Construction • Manufacturing	Window cleaning	18	*Not applicable.* (The regulation governing window cleaning is Reg. 859, R.R.O. 1990.)

Notes to Appendix C

1. As specified in regulations made under the Occupational Health and Safety Act (OHSA). Other statutes and regulations made under those statutes also set minimum ages for various occupations.

   In addition, some workplaces have established their own, *more stringent* minimum ages for employment. For instance, some retail establishments and restaurant chains will not hire anyone under the age of 16, even though the legislated minimum age limit is lower. Similarly, some industrial establishments, and other workplaces that require the use of heavy equipment or machinery, will not hire anyone under the age of 18, even though the legislated minimum age limit might be lower. Such in-house minimum age requirements may be acceptable, as long as the limits do not conflict with the Ontario Human Rights Code or other applicable law.

2. Column 1 identifies the Specialist High Skills Majors with which the workplace categories in column 2 may be associated. Note, however, that some specialist programs may involve workplaces identified in more than one category (e.g., a business program may involve offices, factories, and construction sites). When using this chart to verify compliance

(continued)

with minimum age to work and visit requirements, always refer to the particular type of workplaces involved in the program (column 2), not to the sector to which the program relates (column 1).

3. Under certain conditions, as identified in this table, persons younger than the minimum age to work may visit, *but not work in*, certain workplaces.

4. According to the OHSA, ***industrial establishment*** means an office building, factory, arena, shop or office, and any land, buildings and structures appertaining thereto.

5. According to the OHSA, ***factory*** means

   a) a building or place other than a mine, mining plant or place where homework is carried on, where,

      i) any manufacturing process or assembling in connection with the manufacturing of any goods or products is carried on,

      ii) in preparing, inspecting, manufacturing, finishing, repairing, warehousing, cleaning or adapting for hire or sale any substance, article or thing, energy is,

         (A) used to work with any machinery or device, or

         (B) modified in any manner,

      iii) any work is performed by way of trade or for the purposes of gain in or incidental to the making of any goods, substance, article or thing or part thereof,

      iv) any work is performed by way of trade or for the purposes of gain in or incidental to the altering, demolishing, repairing, maintaining, ornamenting, finishing, storing, cleaning, washing or adapting for sale of any goods, substance, article or thing, or

      v) aircraft, locomotives, or vehicles used for private or public transport are maintained,

   b) a laundry including a laundry operated in conjunction with,

      i) a public or private hospital,

      ii) a hotel, or

      iii) a public or private institution for religious, charitable or educational purposes, and

   c) a logging operation.

6. According to the OHSA, ***logging*** means the operation of felling or trimming trees for commercial or industrial purposes or for the clearing of land, and includes the measuring, storing, transporting or floating of logs, the maintenance of haul roads, scarification, the carrying out of planned burns and the practice of silviculture.

7. According to the OHSA, ***construction*** includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting or concreting, the installation of any machinery or plant, and any work or undertaking in connection with a project but does not include any work or undertaking underground in a mine.

Project means a construction project, whether public or private, including,

a) the construction of a building, bridge, structure, industrial establishment, mining plant, shaft, tunnel, caisson, trench, excavation, highway, railway, street, runway, parking lot, cofferdam, conduit, sewer, water main, service connection, telegraph, telephone or electrical cable, pipe line, duct or well, or any combination thereof,

b) the moving of a building or structure, and

c) any work or undertaking, or any lands or appurtenances used in connection with construction.

8. According to the OHSA, ***mine*** means any work or undertaking for the purpose of opening up, proving, removing or extracting any metallic or non-metallic mineral or mineral-bearing substance, rock, earth, clay, sand or gravel.

9. According to the OHSA, ***mining plant*** means any roasting or smelting furnace, concentrator, mill or place used for or in connection with washing, crushing, grinding, sifting, reducing, leaching, roasting, smelting, refining, treating or research on any substance mentioned in the definition of "mine" (see note 8, above).

Program Profiles

Program Profile: Algoma District School Board

Name of Initiative	**Manufacturing with a Welding Focus**
Brief description	This program focuses on skills that are used in the steel and related manufacturing industries, including welding with testing by the Canadian Welding Bureau (CWB). Students engage in project planning, material estimation, and daily work planning. Students are expected to be responsible for all hand tools and safety equipment assigned to them for the duration of the program. Students must also demonstrate an understanding of health and safety regulations pertaining to the manufacturing industry.
Number of students	60–70
Board	**Algoma District School Board** 644 Albert St East Sault Ste Marie ON P6A 2K7
Board contact	Name: Jan Marrelli Title: Student Success Leader Phone: 705-945-7114 Fax: 705-945-7101 E-mail: marrelj@adsb.on.ca
School 1	**Korah Collegiate** 636 Goulais Ave Sault Ste Marie ON P6C 5A7
School contact	Name: Holly Wickett Title: Principal Phone: 705-945-7180 Fax: 705-945-0750 E-mail: wicketh@adsb.on.ca
School 2	**Bawating Collegiate and Vocational School** 750 North St Sault Ste Marie ON P6B 2C5
School contact	Name: Michael McCabe Title: Principal Phone: 705-945-7178 Fax: 705-945-8975 E-mail: mccabem@adsb.on.ca

Partners:	
Business/Community	- APR Welding - I.C. Mechanical - R.F. Contracting - Rectors Machine Works - Ro-von Steel, Inc. - Soo Foundary / Traders Steel - Superior Industrial Services
College	Sault College
University	Lake Superior State University

Program Profile: Avon Maitland District School Board

Name of Initiative	**Manufacturing High Skills in Stratford**
Brief description	This program focuses on designing, planning, costing, manufacturing, and marketing projects that meet local industry standards. While working on these projects the students are actively engaged in learning a variety of skills such as AutoCAD, MasterCAM, welding, and precision machining using Computer Numerical Control (CNC) and manual equipment.
Number of students	15
Board	**Avon Maitland District School Board** 62 Chalk St North Seaforth ON N0K 1W0
Board contact	Name: Ted Doherty Title: Superintendent of Education Phone: 519-527-0111 ext. 109 Fax: 519-527-0222 E-mail: teddohe@fc.amdsb.ca
School	**Stratford Northwestern Secondary School** 428 Forman Ave Stratford ON N5A 6R7
School contact	Name: Deborah McNair Title: Principal Phone: (519) 271-9740 Fax: (519) 271-7834 E-mail: debmcna@fc.amdsb.ca
Partners:	
Business/Community	- Accumetal Manufacturing - Central Ontario Metal - Chrima Metal Fabrication - Clemmer Steel Craft Industries - Community Futures - Gaffney Welding - Integrated Mechanical Services - Nuhn Industries - Technical Training Group
College	Conestoga College

Program Profile: Greater Essex County District School Board

Name of Initiative	**Greater Essex SHSM–Manufacturing**
Brief description	The program is offered at three secondary schools located in Essex County and focuses on precision metal areas such as tool and die, mould making, and general machining. Students become competent in operating machinery commonly found in the precision metal trades. Students wishing to pursue a college diploma or university degree may achieve advanced standing at the postsecondary level.
Number of students	60
Board	**Greater Essex County District School Board** 451 Park St West Windsor ON N9A 5V4
Board contact	Name: Dave Scaddan Title: Special Assignment Teacher Phone: 519-255-3200 Fax : 519-255-1651 E-mail: dave.scaddan@gecdsb.on.ca
School 1	**General Amherst High School** 130 Sandwich St South Amherstburg ON N9V 1Z8
School contact	Name: Don Parks Title: Manufacturing Teacher Phone: 519-736-2149 Fax: 519-736-1473 E-mail: donald.parks@gecdsb.on.ca
School 2	**Sandwich Secondary School** 7050 Malden Rd LaSalle ON N9J 2T5
School contact	Name: Lee Awad Title: Manufacturing Teacher Phone: 519-734-1237 Fax: 519-734-1220 E-mail: lee.awad@gecdsb.on.ca

School 3	**W.F. Herman Secondary School** 1930 Rossini Blvd Windsor ON N8W 4P5
School contact	Name: Brad Awad Title: Manufacturing Teacher Phone: 519-944-4700 Fax: 519-944-3809 E-mail: Brad.awad@gecdsb.on.ca
Partners: Business/Community	- Classic Tool & Die - Platinum Tool & Mold - South Western Ontario Industry Education Council
College	St. Clair College
University	University of Windsor

Program Profile: Halton District School Board

Name of Initiative	**Ford Academy of Manufacturing Sciences (FAMS)**
Brief description	This program is a multi-destination experiential learning program in which students apply math and physics concepts in the design and production of various manufacturing projects. There is also an optional after-school robotics program in which students earn extra credits in technological design and manufacturing. Students specialize in precision machining, welding, Computer Numerical Control (CNC), Computer-Aided Design / Computer-Aided Manufacturing (CAD/CAM), metallurgy, metrology, sheet metal, and other related manufacturing areas. Through their projects, students are exposed to current technology and develop organizational, team-work, and problem-solving skills.
Number of students	40–50
Board 1	**Halton District School Board** 2050 Guelph Line Burlington ON L7R 3Z2
Board contact	Name: Dave Lewis Title: Pathways, Co-op and Guidance Coordinator Phone: 905-335-3663 ext. 2225 Fax: 905-332-1891 E-mail: lewisd@hdsb.ca
Board 2	**Halton Catholic District School Board** 802 Drury Lane Burlington ON L7R 2Y2
Board contact	Name: Rob DeRubeis Title: Curriculum Consultant – Technological Studies Phone: 905-632-6314 Fax: 905-632-5417 E-mail: derubeisr@hcdsb.org
School 1	**White Oaks Secondary School** 1055 McCraney St East Oakville ON L6H 1H9
School contact	Name: Andrew Watson Title: Manufacturing Technology Teacher Phone: 905-845-5200 Fax: 905-845-5124 E-mail: watsona@hdsb.ca

School 2	**Burlington Central High School** 1433 Baldwin St Burlington ON L7S 1K4
School contact	Name: Chris Arnold Title: Manufacturing Technology Teacher Phone: 905-634-7768 Fax: 905-681-7888 E-mail: arnoldc@hdsb.ca
Partners:	
Business/Community	- Dofasco - Ford Motor Company
Colleges	- Mohawk College - Sheridan College

Program Profile: Hamilton-Wentworth District School Board

Name of Initiative	**Unlock Your Future: Careers in Manufacturing**
Brief description	Offering a range of manufacturing applications, the program at Barton Secondary School has a focus on welding, and the school is an accredited Canadian Welding Bureau testing facility. The program at Orchard Park Secondary School includes welding, machining, pneumatics, hydraulics, blueprint reading, drafting, AutoCAD, CNC, and robotics. In both programs students build leadership skills and apply problem-solving models in a range of design, manufacturing, physics, and programming challenges. Orchard Park's award-winning robotic team has experienced tremendous success in fostering relationships with mentors and with industry.
Number of students	15
Board	**Hamilton-Wentworth District School Board** 100 Main St West Hamilton ON L8P 1H6
Board contact	Name: Gail Cipriani Title: Special Assignment Teacher – SHSM Implementation Phone: 905-527-5092 ext. 2385 Fax: 905-521-2516 E-mail: Gail.Ciapriani@hwdsb.on.ca
School 1	**Barton Secondary School** 75 Palmer Rd Hamilton ON L8T 3G1
School contact	Name: Lawrie Cook Title: Principal Phone: 905-389-2234 Fax: 905-318-6509 E-mail: Lawrie.Cook@hwdsb.on.ca
School 2	**Orchard Park Secondary School** 200 DeWitt Rd Stoney Creek ON L8E 4M5
School contact	Name: Patrick Rocco Title: Principal Phone: 905-573-3550 Fax: 905-664-6603 E-mail: Patrick.Rocco@hwdsb.on.ca

Partners:

Business/Community	· Advanced Welding Techniques · Canadian Welding Association · Canadian Welding Bureau · CNC Woodcraft Ltd. · Edson Packaging Machinery Ltd. · Hamilton Training Advisory Board · RMT Robotics
College	Mohawk College

Program Profile: Kawartha Pine Ridge District School Board

Name of Initiative	Manufacturing SHSM
Brief description	This program focuses on the development of advanced skills and knowledge in various areas of design and emphasizes precision machining, pneumatics, hydraulics, CNC machine operation/programming, and plastic injection moulding and fabrication. Students apply their skills and knowledge in local manufacturing businesses to design and produce a variety of products.
Number of students	25
Board	**Kawartha Pine Ridge District School Board** 1994 Fisher Dr Peterborough ON K9J 7A1
Board contact	Name: Rob Andrews Title: Superintendent of Education (SSL) Phone: 1-877-577-7048 ext. 2173 Fax: 705-742-7801 E-mail: Robert_Andrews@kprdsb.ca
School	**East Northumberland Secondary School** RR 3 71 Dundas St Brighton ON K0K 1H0
School contact	Name: Craig Petherick Title: Head of Technological Education Phone: 613-475-0540 Fax: 613-475-3837 E-mail: Craig_Petherick@kprdsb.ca
Partners:	
Business/Community	• Bellevue Fabricating • Bird's Machine Shop • Deloro Stellite • Nestlé's • Norampac • Trentfab
College	Loyalist College
University	University of Ontario Institute of Technology

Program Profile: Lakehead District School Board

Name of Initiative	**Manufacturing and Energy Connections**
Brief description	This program is designed to train a work force that will be prepared to meet the needs of the energy sector in the region. Key components of the program are the development of welding, millwright, fabrication, and design skills. Skills obtained through the program enable students to be well rounded and to enter a variety of jobs in the manufacturing sector.
Number of students	25
Board 1	**Lakehead District School Board** 2135 Sills St Thunder Bay ON P7E 5T2
Board contact	Name: Lou Kok Title: Student Success Resource Teacher Phone: 807-625-5167 Fax: 807-625-5460 E-mail: Louis_Kok@lakeheadschools.ca
School 1	**Hammarskjold High School** 80 South Clarkson Ave Thunder Bay ON P7B 4W8
School contact	Name: Bram Kamerman Title: Manufacturing Teacher Phone: 807-767-1631 Fax: 807-767-0395 E-mail: Bram_Kamerman@lakeheadschools.ca
School 2	**Hillcrest High School** 96 North High St Thunder Bay ON P7A 5R3
School contact	Name: Gerald Sas Title: Manufacturing Teacher Phone: 807-345-1461 Fax: 807-345-9369 E-mail: Gerals_Sas@lakeheadschools.ca

Board 2	**Conseil scolaire de district catholique des Aurores boréales** 175, rue High Nord Thunder Bay ON P7A 8C7
Board contact	Name: Thérèse Dechêne Title: Directrice, Services pédagogiques Phone: 807-343-4073 Fax: 807-344-3734 E-mail: tdechene@csdcab.on.ca
School	**École secondaire catholique de La Vérendrye** 175, rue High Nord Thunder Bay ON P7A 8C7
Partners: **Business/Community**	• Bombardier • Duke Energy • Ontario Power Generation
College	Confederation College
University	Lakehead University

Program Profile: Limestone District School Board

Name of Initiative	**Limestone Mechanical Program**
Brief description	Students in this program plan, design, and build mechanical projects that serve community needs and provide solutions to local design challenges. This project-driven program focuses on technical design, manufacturing, machining, rigging, and welding. All secondary students in the board are eligible.
Number of students	20
Board	**Limestone District School Board** 220 Portsmouth Ave Kingston ON K7L 4X4
Board contacts	Name: Dale Midwood Title: Supervising Principal Phone: 613-544-6925 ext. 236 Fax: 613-544-6321 E-mail: midwoodd@limestone.on.ca Name: Mike Sewell Title: Skills Training and Technology Program Leader Phone: 613-544-6925 ext. 277 Fax: 613-544-6321 E-mail: sewellm@limestone.on.ca
School 1	**LaSalle Secondary School** 773 Highway 15 RR 2 Kingston ON K7L 5H6
School contact	Name: Bob Chambers Title: Teacher: Mechanical Apprenticeship Program Phone: 613-546-1737 Fax: 613-545-9220 E-mail: lasss@limestone.on.ca

School 2	**Sydenham Secondary School** 2860 Rutledge Rd Box 266 Sydenham ON K0H 2T0
School contact	Name: Anne Otonicar Title: Principal Phone: 613-376-3612 Fax: 613-376-3442 E-mail: sydhs@limestone.on.ca
Partners:	
Business/Community	- Advanced Industrial Training - Excellence in Manufacturing Consortium - George Wright Machine - Goodyear Canada - GT Machine and Fabrication - Invista Corporation - Kingston Chamber of Commerce - Kingston Economic Development Corporation - Limestone Learning Foundation - Princess Auto - 1000 Islands Workforce Development Board - Transformix Engineering - Triple M Consulting
College	St. Lawrence College

Program Profile: London District Catholic School Board

Name of Initiative	**SHSM–Manufacturing Technology**
Brief description	This program is focused on engineering, with students designing and building many types of projects. The program emphasizes the methodical analysis of a problem while keeping innovative ideas threaded throughout the design of a solution to a particular challenge. Learning activities include demonstrations and workshops by guests in the engineering field (e.g., from the University of Western Ontario, the Davenport Wind Tunnel, and the Integrated Manufacturing Technologies Institute). Students gain skills in machining, CNC programming, and fabricating using hand tools. Students work as teams and gain valuable teamwork and communication skills. Students assemble an engineering portfolio organizing the processes, categorizing the different components, and showcasing their learning.
Number of students	55
Board	**London District Catholic School Board** P.O. Box 5474 London ON N6A 4X5
Board contact	Name: Sharon Gillies Title: Coordinator – Mathematics, Science, and Technological Studies Phone: 519-663-2088 ext. 42104 Fax: 519-663-9250 E-mail: s.gillies@ldcsb.on.ca
School	**John Paul II Catholic Secondary School** 1300 Oxford St East London ON N5V 4P7
School contact	Name: Andre Benteau Title: Program Teacher Phone: 519-675-4432 Fax: 519-457-3680 E-mail: a.beneteau@ldcsb.on.ca

Partners:	
Business/Community	• Canadian Manufacturers and Exporters, Southwest Ontario Branch • Do-All Industrial Supply • Ford Motor Co./Canadian Auto Workers, Local 1520 • General Dynamics • Mitchell Odyssey Foundation • Rho-Can Mfg., Inc. • University of Western Machine Services
College	Fanshawe College
University	University of Western Ontario

Program Profile: District School Board of Niagara

Name of Initiative	**SHSM–Manufacturing**
Brief description	This program addresses four areas of manufacturing: precision machining, robotics, welding, and design and technology. Students engage in a wide variety of manufacturing opportunities ranging from the design and construction of state-of-the-art robots that compete in Skills Canada and FIRST Robotics competitions to working in state-of-the-art manufacturing facilities. This program is available to all students in the board.
Number of students	25
Board	**District School Board of Niagara** 191 Carlton St St. Catharines ON L2R 7P4
Board contacts	Name: Ray Smith Title: Superintendent Phone: 905-641-1550 Fax: 905-685-8511 E-mail: Ray.Smith@dsbn.edu.on.ca Name: Kevin Graham Title: Technological Education Consultant Phone: 905-227-5551 ext. 2299 Fax: 905-227-4731 E-mail: Kevin.Graham@dsbn.edu.on.ca
School	**Fort Erie Secondary School** 7 Tait Ave Fort Erie ON L2A 3P1
School contact	Name: Ken Willms Title: SHSM Construction Teacher Phone: 905-327-1244 Fax: 905-871-8944 E-mail: Ken.Willms@dsbn.edu.on.ca

Partners:	
Business/Community	• Aerosafe Technologies • Canadian Welding Association • FIRST Robotics • General Motors of Canada Ltd. • Skills Canada–Ontario
College	Niagara College
University	University of Waterloo

Program Profile: Conseil scolaire de district catholique du Nouvel-Ontario

Name of Initiative	**Specialization in Welding in the Manufacturing Sector**
Brief description	This multidimensional project requires cooperation and collaboration on the part of many stakeholders. It creates a continuum of guidance and training based on student success from Grade 7 to the student's postsecondary destination. The program includes multi-credit courses, virtual and specialized training, industry-recognized certifications, and a solid apprenticeship component.through progressive learning from Grade 7 to Grade 12.
Number of students	15
Board	**Conseil scolaire de district catholique du Nouvel-Ontario** 201, rue Jogues Sudbury ON P3C 5L7
Board contact	Name: Ginette Poulin-Vaillancourt Title: Coordonnatrice, Service de soutien à l'apprentissage, 7e à la 12e année Phone: 705-673-5626 ext. 363 Fax: 705-670-9922 E-mail: ginette.poulinvaillancourt@nouvelon.ca
School	**École secondaire catholique Champlain** 61, chemin Brookside Chemsford ON P0M 1L0
School contact	Name: Daniel Dalcourt Title: Directeur Phone: 705-855-9046 Fax: 705-855-9048 E-mail: daniel.dalcourt@nouvelon.ca

Partners:	
Business/Community	• Alotech • Anmar Welding • Canadian Welding Bureau • Canadian Welding Sudbury • City Welding • HLS Hard Line Solutions • Inco • Lessard Welding • Manitoulin Workforce Bureau • Mansour • Norcat • Union Gas
College	Collège Boréal
University	Université Laurentienne

Program Profile: District School Board Ontario North East

Name of Initiative	**Timmins High and Vocational School (THVS) Manufacturing**
Brief description	This program focuses on metal fabrication and welding.There is an emphasis on the acquisition of industry standard skills related to machining, welding, and welding-fitting (e.g., designing, welding, and constructing trailers); repairing mining equipment; deconstructing cars; and working at a recycling plant.
Number of students	35
Board(s)	**District School Board Ontario North East** 153 Croatia Ave Box 1020 Timmins ON P4N 7H7
Board contact	Name: Michelle Leigh Title: Superintendent of Schools Phone: 705-360-1151 ext. 690 Fax : 705-268-3228 E-mail: michelle.leigh@dsb1.edu.on.ca
School	**Timmins High and Vocational School (THVS)** 451 Theriault Blvd Timmins ON P4N 8B2
School contact	Name: Al McLean Title: Vice Principal Phone: 705-360-1411 ext. 702 Fax: 705-268-6603 E-mail: alan.mclean@dsb1.edu.on.ca
Partners:	
Business/Community	- Chartrand Equipment - City of Timmins - Dumas Mining - GORF Contracting - Leo Allarie and Sons - MDG Welding - Norfab Metal and Machine - Northern College Apprenticeship Program - Porcupine Joint Venture - Premier Recycling - RLP Machine and Steel - Steeltec Welding - Steelworks - Timmins Trailers

Program Profile: Peel District School Board

Name of Initiative	**SHSM–Manufacturing**
Brief description	This program has an emphasis on robotics leading to careers in the skilled trades and engineering. Students complete units in CAD/ CAM, microelectronics, computer control, welding, machining, and project design. The culminating activity in the program is the design and construction of a robot used to compete in robotics competitions.
Number of students	54
Board	**Peel District School Board** 5650 Hurontario St Mississauga ON L5R 1C6
Board contact	Name: Rebecca Crouse Title: Instructional Coordinator – Secondary Programs Phone: 905-890-1010 ext. 2557 Fax: 905-890-8052 E-mail: rebecca.crouse@peelsb.com
School	**Rick Hansen Secondary School** 1150 Dreamcrest Blvd Mississauga ON L5V 1N6
School contact	Name: John Hobbins Title: Technology Department Head Phone: 416-606-6934 Fax: 905-567-5017 E-mail: john.hobbins@peelsb.com
Partners: **Business/Community**	General Motors of Canada Ltd.
College	Humber College

Program Profile: Peel District School Board

Name of Initiative	**Manufacturing for a Future / Creative Solutions Inc.**
Brief description	The emphasis of the Manufacturing for a Future program at Port Credit Secondary School is on manufacturing techniques such as welding, machining, design, and fabrication. Learning activities include welding, lathe and milling machine work, pneumatics, programmable logic controls (PLC), and basic robotics as well as various types of design software. Creative Solutions Inc., offered by Sandalwood Heights Secondary School, has a manufacturing emphasis in three areas: structural steel detailing, fine jewellery creation, and commercial computer-aided design. Students participate in cooperative education placements at Magna International, the Magna Technical Training Centre (MTTC), and Magnus Inc. "Reach ahead" opportunities are available through partnerships with Humber College, Sheridan College, and Ryerson University.
Number of students	50
Board	**Peel District School Board** 5650 Hurontario St Mississauga ON L5R 1C6
Board contact	Name: Rebecca Crouse Title: Instructional Coordinator – Secondary Phone: 905-890-1010 ext. 2557 Fax: 905-890-1112 E-mail: rebecca.crouse@peelsb.com
School 1	**Port Credit Secondary School** 70 Mineola Rd East Mississauga ON L5R 1C6
School contact	Name: Jan Courtin Title: Principal Phone: 905-278-3382 Fax: 905 278-8936 E-mail: jan.courtin@peelsb.com

School 2	**Sandalwood Heights Secondary School** 2671 Sandalwood Parkway East Brampton ON L6R 0K7
School contact	Name: John Chasty Title: Principal Phone: 905-494-0023 ext. 401 Fax: 905-361-1602 E-mail: john.chasty@peelsb.com
Partners:	
Business/Community	• Magna International • Magna Technical Training Centre • Magnus, Inc. • Millomat Stampings, Inc.
Colleges	• Humber College • Humber Institute of Technology and Advanced Learning • Sheridan Institute of Technology and Advanced Learning
University	Ryerson University

Program Profile: St. Clair Catholic District School Board

Name of Initiative	**Step Forward – Manufacturing Specialist**
Brief description	This program builds on a strong design component and problem-solving approach to manufacturing. Students have the opportunity to develop the skill sets necessary to be successful in both wood and metal machining. Individual and community projects are designed and completed using welding, sheet metal fabrication, CNC, and machining. This initiative provides students with the opportunity to earn dual credits in machining and welding.
Number of students	20
Board	**St. Clair Catholic District School Board** 420 Creek St Wallaceburg ON N8A 4C4
Board contact	Name: Ann Sutton Title: Superintendent of Education Phone: 1-866-336-6139 Fax: 519-627-8230 E-mail: ann.sutton@st-clair.net
School	**Ursuline College (The Pines) Catholic Secondary School** **Chatham Catholic Secondary School** 85 Grand Ave West Chatham ON N7L 1B6
School contact	Name: Celeste Marty Title: Technology Teacher Phone: 519-351-2987 Fax: 519-351-2988 E-mail: celeste.marty@st-clair.net
Partners: **Business/Community**	- Chatham Kent Workforce Development Board - Engineers Without Borders - Sarnia Lambton Workforce Development
College	St. Clair College
University	University of Western Ontario

Program Profile: Conseil scolaire de district des écoles catholiques du Sud-Ouest

Name of Initiative	**Technology for All**
Brief description	The Technology for All program, which blends welding courses and a robotics program, is a multidisciplinary program that responds to the interests of students heading for all four postsecondary destinations. Students earn industry-recognized certifications in welding and have the opportunity to take part in the FIRST Robotics competition.
Number of students	10
Board	**Conseil scolaire de district des écoles catholiques du Sud-Ouest** 7515, promenade Forest Glade Windsor ON N8T 3P5
Board contact	Name: Gina Michaud Title: Conseillère pédagogique Phone: 519-948-9227 ext. 272 Fax: 519-948-4013 E-mail: michgina@csdecso.on.ca
School	**École secondaire catholique Saint-François-Xavier** 901, promenade Les Rapides Sarnia ON N7S 6K2
School contacts	Name: Carole St-Denis Title: Enseignante Phone: 519-542-1055 Fax: 519-542-2841 E-mail: stdecaro@csdecso.on.ca Name: Ronald Perron Title: Enseignant Phone: 519-542-1055 Fax: 519-542-2841 E-mail: perrrona@csdecso.on.ca
Partners: **Business/Community**	· CAN-WELD · Ontario Power Generation
College	Collège Boréal

Program Profile: Thames Valley District School Board

Name of Initiative	**Youth Employment Skills (YES) Program**
Brief description	This program draws students from the Thames Valley District School Board and the London District Catholic School Board. Through a partnership with Fanshawe College the students receive a portion of their training at the college and earn college credits. Students' summer work placements and the four cooperative education credits they take provide opportunities to partially complete the apprenticeship training standards.
Number of students	22
Board 1	**Thames Valley District School Board** 1250 Dundas St P.O. Box 5888 London ON N5W 5P2
Board contact	Name: John Verbakel Title: Learning Supervisor of Applied Studies Phone: 519-452-2000 ext. 20389 Fax: 519-452-2329 E-mail: j.verbakel@tvdsb.on.ca
Board 2	**London District Catholic School Board** P.O. Box 5474 5200 Wellington Rd South London ON N6A 4X5
Board contact	Name: Cathy Sexton Title: Superintendent for Program Achievement and Evaluation, JK–Gr. 12 Phone: 519-663-2088 ext. 40005 Fax: 519-663-9250 E-mail: c.sexton@ldcsb.on.ca
School	**H.B. Beal Secondary School** 525 Dundas St London ON N6B 1W5
School contact	Name: Steve Lane Title: Y.E.S. Coordinator Phone: 519-452-2700 Fax: 519-452-2729 E-mail: Steven.Lane@tvdsb.on.ca

Partners:

Business/Community

- Ford Motor Co./Canadian Auto Workers, Local 1520
- The Elgin, Middlesex, Oxford Local Training Board
- Youth Opportunities Unlimited

Program Profile: Upper Grand District School Board

Name of Initiative	**SHSM–Manufacturing**
Brief description	Students establish links with the manufacturing community in the Guelph area and receive valuable hands-on training. In addition, the manufacturing facility at College Heights Secondary School is a certified Canadian Welding Bureau test centre. Activities include practical projects and collective work that are designed to meet industry standards. Learning activities include: flame cutting, fabrication, assembly techniques, conventional machine tool practices and theory, precision measurement, and safety awareness.
Number of students	46
Board	**Upper Grand District School Board** 500 Victoria St North Guelph ON N1E 6K2
Board contact	Name: David Euale Title: Superintendent of Schools and Student Success Leader Phone: 519-822-4420 ext. 742 Fax: 519-822-5894 E-mail: david.euale@ugdsb.on.ca
School	**College Heights Secondary School** 371 College Ave West Guelph ON N1G 1T3
School contact	Name: Charles Benyair Title: Head of School Pathways Programming Phone: 519-837-5510 ext. 383 Fax: 519-821-5531 E-mail: charles.benyair@ugdsb.on.ca

Partners:	
Business/Community	- Alloy Welding Centre - Blount Canada - Chaarani Welding - Friends of Guelph - Guelph Rotary Club - Linamar Corporation - Oskam Welding - Wentworth Financial Services
College	Conestoga College
University	University of Guelph

Program Profile: Wellington Catholic District School Board

Name of Initiative	**Precision Machining**
Brief description	This program enables students to gain knowledge and skills using conventional machining practices, precision measurement, applied trade calculations, bench working techniques, and engineering drawings and layout processes. Students expand their career opportunities in the manufacturing sector with the service, repair, maintenance, and programming of a 6-axis robot. The program involves collaboration with the coterminous board in the areas of certifications, local advisory groups, calendar planning and coordination, field trips, and job shadowing.
Number of students	20
Board	**Wellington Catholic District School Board** 75 Woolwich St Guelph ON N1H 6N6
Board contact	Name: Dom DiBartolomeo Title: Student Success Leader Phone: 519-821-4600 Fax: 519-824-3088 E-mail: ddibartolomeo@wellingtoncssb.edu.on.ca
School	**Our Lady of Lourdes Catholic High School** 54 Westmount Rd Guelph ON N1H 5H7
School contact	Name: Eileen Clinton Title: Vice Principal Phone: 519-836-2170 Fax: 519-823-1010 E-mail: eileen_clinton@wellingtoncssb.edu.on.ca
Partners: **Business/Community**	- Lewis Tool & Die - Linamar
College	Conestoga College

Program Profile: York Region District School Board

Name of Initiative	**Manufacturing York**
Brief description	Students participate in cooperative education placements in numerous Magna divisions or with other employers in the community where they have opportunities for pre-apprenticeship and apprenticeship training. This initiative is a partnership with Peel District School Board, which offers similar programming and partnerships. The program is available to students across York Region.
Number of students	30
Board	**York Region District School Board** The Education Centre 60 Wellington St West, Box 40 Aurora ON L4G 3H2
Board contact	Name: Jane Cutler Title: Curriculum Administrator, Student Success Phone: 905-727-0022 ext. 3435 Fax: 905-727-6282 E-mail: jane.cutler@yrdsb.edu.on.ca
School	**Huron Heights Secondary School** 40 Huron Heights Dr Newmarket ON L3Y 3J9
School contact	Name: Steve Poste Title: School–Work Transition Consultant Phone: 905-727-0022 ext. 3859 Fax: 905-727-6282 E-mail: steve.poste@yrdsb.edu.on.ca
Partners: **Business/Community**	• Magna International • Magna Technical Training Centre
College	Humber College